# **EXHIBIT 1**

# In the Matter Of:

NCS MULTISTAGE INC. vs

NINE ENERGY SERVICE

JOHN RODGERS, PH.D. P.E.

November 09, 2020



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1
1
              IN THE UNITED STATES DISTRICT COURT
               FOR THE WESTERN DISTRICT OF TEXAS
 2
                        WACO DIVISION
 3
     NCS MULTISTAGE INC.
        Plaintiff,
 4
                                CIVIL ACTION NO.
     vs.
 5
                                6:20-cv-00277-ADA
     NINE ENERGY SERVICE,
     INC.
 6
        Defendant.
 7
    ****************
 8
 9
           REMOTE ORAL AND VIDEOTAPED DEPOSITION OF
10
                 JOHN P. RODGERS, Ph.D., P.E.
11
                      NOVEMBER 9, 2020
    12
13
        REMOTE ORAL AND VIDEOTAPED DEPOSITION OF JOHN P.
14
   RODGERS, Ph.D., P.E., produced as a witness at the
15
   instance of the Defendant, and duly sworn, was taken
16
   remotely in the above-styled and numbered cause on the
   9th day of November, 2020, from 9:55 a.m. to 3:57 p.m.,
17
18
   via Zoom, before Julie C. Brandt, RMR, CRR, and CSR in
19
   and for the State of Texas, reported by machine
20
   shorthand, with the witness located in Ridgefield,
21
   Connecticut, pursuant to the Federal Rules of Civil
22
   Procedure and the provisions stated on the record or
23
   attached hereto.
24
25
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2
 1
                        REMOTE APPEARANCES
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22
    VIDEOGRAPHER:
23
         Ryan LaFond - Lexitas Legal Solutions
24
25
```

	44
1	Q. The last sentence of the abstract reads, Full
2	casing internal diameter may be restored in the region
3	where the rupture disc formerly sealed the casing.
4	Have I read the last sentence of the abstract
5	accurately?
6	A. Yes.
7	Q. In this context, does the word "internal
8	diameter" refer to a diameter or a sidewall?
9	A. That would come off interpreted either way,
10	and you get the same meaning out of the sentence which
11	is you want full bore flow through the casing. I think
12	in the oilfield industry, you want full casing ID, you
13	want full flow through that full bore. I am not
14	referring to a exact measurement. I just want it to be
15	open. So it's closer to the surface definition. I want
16	a uniform surface flow through that bore.
17	
	Q. Is it your opinion that the diameter
18	
<ul><li>18</li><li>19</li></ul>	Q. Is it your opinion that the diameter understanding of internal diameter would still allow the sentence to make sense to a person of ordinary skill?
	understanding of internal diameter would still allow the
19	understanding of internal diameter would still allow the sentence to make sense to a person of ordinary skill?
19 <b>20</b>	understanding of internal diameter would still allow the sentence to make sense to a person of ordinary skill?  A. Yes.
19 <b>20</b> 21 22	understanding of internal diameter would still allow the sentence to make sense to a person of ordinary skill?  A. Yes.  Q. To a certain of ordinary skill in the oil and gas industry, if presented with a text that could have
19 20 21 22 23	understanding of internal diameter would still allow the sentence to make sense to a person of ordinary skill?  A. Yes.  Q. To a certain of ordinary skill in the oil and gas industry, if presented with a text that could have both meanings, diameter and sidewall, is there a
19 <b>20</b> 21 22	understanding of internal diameter would still allow the sentence to make sense to a person of ordinary skill?  A. Yes.  Q. To a certain of ordinary skill in the oil and gas industry, if presented with a text that could have

	45
1	A. Not with one sentence standing by itself like
2	that, I don't think there's a preference. And in this
3	case, like we discussed, both work.
4	Q. At this point, could you please turn to column
5	1 of the '445 patent? It appears on page 10 of the
6	document in front of you.
7	A. Okay.
8	Q. If you could, look to the lines 47 through 55
9	which read, In many casing float techniques and devices
10	it may not be possible to achieve full casing ID inside
11	diameter following the opening of the air chamber. It
12	is desirable to achieve full casing ID so that downhole
13	tools can be conveyed to this region of the casing
14	string and so operations, such as cementing, can be
15	easily carried out using conventional ball drop
16	techniques or other conventional techniques. Also, many
17	float devices require the use of specialized float shoes
18	and/or float collars.
19	Have I read that accurately?
20	A. Yes.
21	Q. In the context of this paragraph, do you see
22	where the term "ID" is used
23	A. Yes, I do.
24	Q as an abbreviation?
25	Do you see where the word "inside diameter" is

	46
1	used?
2	A. Oh, yes, in the parenthesis.
3	Q. In this paragraph, does the term "ID" or
4	"inside diameter" refer to a diameter or a sidewall?
5	A. In my reading, it's sidewall, but I think both
6	work in this full casing ID context.
7	Q. What about this paragraph makes you think that
8	the sidewall definition could be used?
9	A. It's the same as the abstract sentence we just
10	discussed. It just refers to one the motivation to
11	achieve a full bore you know, bore is the same
12	it's another synonym for ID. So in, you know, oilfield
13	terminology and working with downhole tools, it's just
14	very common to talk in terms of ID, meaning that inside
15	surface or that inside bore flow path through the
16	tubulars.
17	Q. Thank you, Dr. Rodgers.
18	If you could, look to column 2, which appears
19	on the same page. Column 2, lines 40 through 44. Where
20	the sentence begins, In addition, full casing ID, inside
21	diameter, is restored after the rupture disc is broken
22	so that there is no need to drill out any part of the
23	device. This full casing ID is useful for use in ball
24	drop systems.
25	In these sentences, does the term "ID" or

	47
1	"inside diameter" refer to a diameter or a sidewall?
2	A. It's pretty much the same as the last couple
3	of examples. I read it first as inside diameter being
4	the surface, but it works with both.
5	Q. Why do you read this first as being the inside
6	surface?
7	A. Because that's the most common usage in, you
8	know, downhole tool oilfield discussion terminology
9	among persons of ordinary skill, unless there's a
10	specific measurement. You know, if I'm trying to
11	measure the internal diameter, that's one thing.
12	I don't read this as a measurement requirement
13	in the sense I'm thinking more full flow through the
14	internal you know, internal bore, internal diameter
15	of that casing, and that doesn't require that I quantify
16	it as a scaler.
17	Q. If you would, please, turn to column 6, which
18	appears on page 12 of the document. I would like to
19	direct your attention to lines 62 through 66 where it
20	says, Once the disc has been ruptured, the inside
21	diameter of the casing string in the region of the
22	
	rupture disc assembly 10 is substantially the same as
23	rupture disc assembly 10 is substantially the same as that in the remainder of the casing string, e.g., casing
23	that in the remainder of the casing string, e.g., casing

	48
1	In this paragraph, does the term "inner
2	diameter" or "ID" refer to a diameter or a sidewall?
3	A. This sounds more like a numerical diameter,
4	because I'm actually saying it's the same as the casing
5	string. That triggers me to think measurement of
6	diameter.
7	Q. Is it your opinion that a comparison of inner
8	diameters, or IDs, refers to the diameter understanding
9	of internal diameter?
10	MR. LLAGOSTERA: Objection, form.
11	A. That's going to depend on the sentence. I
12	know in this case that's what comes to mind when I read
13	this.
14	Q. (BY MR. HANCOCK) Is it the word "same,"
15	"substantially the same as" that gives you that context
16	in this sentence?
17	A. Yes, I'd say that's right.
18	Q. Would you understand the phrase "substantially
19	the same" to be a comparison?
20	A. Yes.
21	Q. If you would, please turn to column 7, which
22	appears on the top of page 13.
23	A. Okay.
24	Q. I direct your attention to column 7, lines 3
25	and 4 where it says, In other words, the tubular string

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61
    well fluid, the casing string having an internal
 1
 2
    diameter that defines a fluid passageway between an
 3
    upper portion of the casing string and a lower portion
 4
    of the casing string, the float tool comprising.
 5
              Have I read that accurately?
 6
         Α.
              Yes.
 7
         Q.
              Do you understand here -- or, first, as used
    in the preamble, does the phrase "internal diameter"
 8
 9
    carry its diameter or sidewall definition?
10
         Α.
              I read it as sidewall.
11
              What from this context makes you believe that
         Ο.
12
    it refers to the sidewall rather than the diameter?
13
         Α.
              I'm just talking in general terms about the
14
    fluid passage of the interior of a casing string, and to
15
    me that's the sidewall definition.
16
              At this point, I would like to introduce what
    will be Deposition Exhibit 6, which is a table referring
17
    to casing diameters which will be dropped in the chat
18
19
    momentarily.
20
                   (Exhibit 6 marked.)
21
                   MR. LLAGOSTERA: Dr. Rodgers, do you need
22
    a break? We've been going more than an hour. I'm fine
23
    if you're fine.
                   THE WITNESS: I'm fine. Happy to keep
24
25
    going. Thank you, though.
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	62
1	MR. LLAGOSTERA: Okay.
2	Q. (BY MR. HANCOCK) All right. Let me know when
3	you have that downloaded and open.
4	A. Okay. I have it.
5	Q. Dr. Rodgers, do you recognize this document?
6	A. I do.
7	Q. What is this document?
8	A. I referred to it as the World Oil casing
9	tables.
10	Q. Can you describe what the World Oil casing
11	tables are?
12	A. Yeah, World Oil is just an industry
13	publication in the oil industry. And at some interval,
14	they publish something known as casing tables, which are
15	just a listing of many different products offered in the
16	industry that relate to casing, different types of
17	casing.
18	Q. On page 2 of the document in front of you, do
19	you see a section that's entitled "Dimension
20	Nomenclature"?
21	A. Yes.
22	Q. Do you see on the third line of definitions
23	the lower case d, which it says, "d = ID (drift) in."?
24	A. Yes.
25	Q. What does that refer to?

	63
1	A. That refers to the measurement or the straight
2	diameter definition that you've been describing of the
3	interior diameter of that casing.
4	Q. Is the feature that is described here with
5	lower case d shown in any of the figures to the right of
6	these definitions?
7	A. Yes. Each one of them each one of the four
8	figures has the little d pointed out.
9	Q. Would you describe those excuse me. Strike
10	that question.
11	In each of the circumstances in the four
12	figures shown to the right, does the letter d refer to a
13	diameter or a sidewall of the casing strings depicted?
14	A. They're referring to a diameter, the
15	measurement.
16	Q. And how are you how are you strike the
17	question.
18	What leads you to the conclusion that here
19	it's referring to the diameter and not the sidewall?
20	A. We're talking about this document is
21	
	talking about specific examples and specific sizes of
22	talking about specific examples and specific sizes of available products on the market. So they're referring
	•
22	available products on the market. So they're referring

	64
1	Q. Here does the term "ID" depicted as lower case
2	d refer to the diameter of a fluid passage through the
3	devices depicted in the figures?
4	A. Yes, it's the diameter of the casing which is
5	also the diameter of the fluid passage.
6	Q. Returning to the '445 patent, in the preamble
7	of claim 1 that begins on line 6 of column 14, is there
8	something different about the phrase "internal diameter"
9	that defines a fluid passageway that would provide to
10	you a different understanding of internal diameter than
11	the exhibit we just looked at?
12	MR. LLAGOSTERA: Objection, form.
13	A. Yes. I mean, there's no there's no cue in
14	that part of the sentence that indicates anything
15	numerical or measurement oriented to me.
16	Q. (BY MR. HANCOCK) Turning to the limitation
17	that begins on line 17, do you see the phrase at the
18	very end of that limitation "the internal diameter of
19	the casing string"?
20	A. As in parallel to the internal diameter of the
21	casing string?
22	Q. Yeah. Do you see the phrase "internal
23	diameter of the casing string"?
24	A. Yes.
25	Q. Would you understand that as referring to the

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1	Q. I would like to ask you some questions about
2	the term "sealing engagement." Prior to reading the
3	'445 patent, were you aware of the term "sealing
4	engagement" in any context?
5	A. No. It sounds like patent terminology to me
6	again.
7	Q. What does the term "engagement" mean?
8	A. Some sort of interaction between two items,
9	two components in a downhole tool context.
10	Q. Can two elements or components be in
11	engagement with one another if they are merely touching?
12	A. Yes.
13	Q. Would you refer to the binder sitting in front
14	of you as an engagement with the table that it's sitting
15	on?
16	A. Yes.
17	Q. Dr. Rodgers, at this point I would like to
18	introduce what will be Deposition Exhibit 9, which is a
19	listing of definitions from The Random House College
20	Dictionary.
21	(Exhibit 9 marked.)
22	Q. (BY MR. HANCOCK) Please let me know when you
23	have that document open in front of you.
24	A. Okay. I have it.
25	Q. Can you please turn to page 5 of that

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1	document, which is a page from that dictionary with
2	words that start with the letter E.
3	A. I have it.
4	Q. At the bottom left side of the page, the term
5	"engage" appears. Dr. Rodgers, can you please read to
6	yourself that definition for a moment?
7	A. Okay.
8	Q. Do any of the definitions listed here in this
9	dictionary entry use the term or refer to the term
10	"engage" in the same sense that it is used in the '445
11	patent?
12	A. Well, engage is used in multiple ways in the
13	'445 patent or in multiple places. Sometimes it's
14	sealing engagement. Sometimes there are other types of
15	engagement. So we might have to be we would have to
16	consider them independently. But, in general, there are
17	a few terms here, you know, tubular member locked with,
18	to attach, to secure obviously. We talked about that.
19	And interlock 14 there in the context of gears. So all
20	those are roughly related to the physics of things in
21	contact.
22	Q. And just for clarity in looking at that
23	dictionary entry, am I correct in saying that you are
24	referring to definitions number 8 and number 9 and
25	number 14?

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1	A. That's correct.
2	Q. Is the binder sitting on your desk engaged
3	with the table in the sense of any of those definitions?
4	A. Yes. I see the binder as making contact with
5	force. There is engagement between the binder and the
6	table.
7	Q. Where in the dictionary entry in front of you
8	is in contact sufficient to be engaged?
9	A. My read on those three definitions means I
10	have some sort of contact or force between the items.
11	So all three of the ones that I referenced before,
12	clearly 8 and 14 are more specialized definitions
13	perhaps going towards gear design, but in mechanical
14	engineering in general, I would say that all three of
15	them refer to the fact that there's a contact that
16	occurs between the two objects, some sort of contact.
17	Q. Is contact alone sufficient for two components
18	to be engaged with one another?
19	MR. LLAGOSTERA: Objection, asked and
20	answered.
21	A. That's that's what I'm saying.
22	Q. (BY MR. HANCOCK) Dr. Rodgers, in the sense of
23	the '445 patent where the term "sealing engagement" is
24	used, can two components be in sealing engagement with
25	one another, move relative to one another, while

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1	Does the sidewall or diameter definition apply
2	to the use of internal diameter in the claim amendment
3	presented on page 2?
4	A. Sidewall.
5	Q. And with this amendment, what is the internal
6	diameter of the casing string parallel to?
7	MR. LLAGOSTERA: Objection to form.
8	A. The region of the tubular member where the
9	rupture disc is attached.
LO	Q. (BY MR. HANCOCK) Is it your understanding
L1	from the claim that the region where the rupture disc is
L2	attached must have an internal diameter?
L3	A. It's a region of a tubular member. So it's
L 4	going to have it's going to be cylindrical, and it's
L5	going to have an internal diameter.
L 6	Q. Is it your understanding that internal
L7	diameter must be the diameter understanding of the term
L 8	"internal diameter" in order to be compared as larger
L 9	than the internal diameter of the casing string?
20	MR. LLAGOSTERA: Objection, form.
21	Q. (BY MR. HANCOCK) Go ahead. Don't answer that
22	question. I'll ask a better one.
23	A. Okay.
24	Q. In the version of claim 1 on page 2 where it
25	reads "The region of the tubular member where the

	148
1	rupture disc is attached has a larger internal diameter
2	than the internal diameter of the casing string," you've
3	now testified twice today that that refers to the
4	diameter understanding of internal diameter. Is that
5	correct?
6	A. Yes, that's right.
7	Q. Does that mean that the larger internal
8	diameter of the region of the tubular member where the
9	rupture disc is attached also refers to the diameter
10	understanding of internal diameter?
11	MR. LLAGOSTERA: Objection, form.
12	A. If you have a larger internal diameter than
13	the internal diameter of the casing string, that is
14	referring to the term the definition "diameter"
15	meaning measurement.
16	Q. (BY MR. HANCOCK) Is it possible to determine
17	if an internal diameter under the diameter understanding
18	of internal diameter is parallel to an internal diameter
19	under the sidewall definition of internal diameter?
20	MR. LLAGOSTERA: Objection, form.
21	A. No, it doesn't make any sense to try to say
22	it's parallel to an internal diameter if that internal
23	diameter means diameter as in measurement.
24	
27	Q. (BY MR. HANCOCK) Please turn to page 11 of
25	Q. (BY MR. HANCOCK) Please turn to page 11 of this response.

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151
    column -- sorry, let me give you a moment to get it up.
 1
 2
         Α.
              I've got it.
              Can you please turn to column 8 of the Gano
 3
    references lines 45 and 46?
4
5
              Do you see the sentence that reads, It also
    presents inwardly facing upper arcuate shoulders 126
6
7
    upon which the radial edges of plug 102 are seated?
8
              Have I read that accurately?
9
         Α.
              Yes.
10
              Do you see the use of the term "seated" to
         Q.
11
    describe the rupture disc as seated on element 126 in
12
    that sentence of Gano?
13
         Α.
              Yes.
14
              Turning to figure 3 of Gano, can you identify
15
    the rupture disc 104 and the shoulder 126? And all I
16
    need is confirmation that you have identified where
    those are.
17
         A. Yes, I see it -- them.
18
19
              Would a person of ordinary skill in the art
20
    presume from the sentence that I just read and the
21
    figure that you see in front of you that a substantially
    fluid tight seal would be formed between the rupture
22
23
    disc 104 and shoulder 126?
24
         Α.
              No.
25
              Why not?
         Q.
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	152
1	A. I don't have enough information to know that
2	the rupture disc is sealing to that shoulder 126. It's
3	seated on it, but that doesn't mean it's sealed to it.
4	Q. Is it your understanding that the float
5	tool excuse me, let me strike that.
6	Is it your understanding that the tool
7	depicted in figure 3 of Gano is a rupture disc assembly
8	for blocking a pipe of some kind?
9	A. Yes.
10	Q. To the extent that a seal is not formed
11	between rupture disc 104 and shoulder 126, do you have
12	any opinions as to where that seal might be formed?
13	A. Yes. There's an O-ring or some sort of seal
14	at 118 on the upper surface of the rupture disc.
15	Q. Are you referring to element 118 or 116? 116
16	appears in my version to be the O-ring.
17	A. 118. 116 is the O-ring for that upper piston.
18	I forget exactly the terminology. But then there's a
19	second seal that's got to occur between 114, which is
20	that upper piston, and the rupture disc itself. It's a
21	triangular region there.
22	Q. Understood.
23	So then your understanding of Gano is that the
24	rupture disc 104 is sealed or creates a seal at element
25	118 but is seated on surface 126?

	153
1	A. Yes.
2	Q. Returning to Deposition Exhibit 12, the
3	response to notice of noncompliant amendment, and
4	referring to the last sentence of the first paragraph of
5	page 12, would it be fair to say that this sentence is
6	discussing the Gano reference and what the Gano
7	reference discloses?
8	A. Yes.
9	Q. Does this sentence refer to or describe any
10	feature of figure 2 of the '445 patent?
11	A. I don't think so.
12	Q. Can you please turn to figure 2 of the '445
13	patent?
14	A. Okay.
15	Q. In the embodiment shown in figure 2, is the
16	rupture disc seated on any feature of the embodiment
17	shown in figure 2?
18	A. Yes.
19	Q. Where is the rupture disc seated?
20	A. It's seated on the sheer tabs, which is part
21	of the sheer ring.
22	Q. Returning to claim 1 of the '445 patent, I
23	would like to discuss the next limitation, which is that
24	the attachment region is parallel to an internal
25	diameter of the casing string.

#### Case 6:20-cv-00277-ADA Document 49-1 Filed 12/11/20 Page 22 of 26

		179
1	CHANGES AND SIGNATURE	
2	WITNESS NAME: JOHN P. RODGERS, Ph.D., P.E.	
3	DATE OF DEPOSITION: NOVEMBER 9, 2020	
4	PAGE LINE CHANGE REASON	
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25		

	180
1	I, JOHN P. RODGERS, Ph.D., P.E., have read the foregoing deposition and hereby affix my signature that
2	same is true and correct, except as noted above.
3	
4	
5	JOHN P. RODGERS, Ph.D., P.E.
6	
7	THE STATE OF) COUNTY OF)
9	Refere me
	Before me,, on
10	this day personally appeared JOHN P. RODGERS, Ph.D.,
11	P.E., known to me (or proved to me under oath or through
12	) (description of identity
13	card or other document) to be the person whose name is
14	subscribed to the foregoing instrument and acknowledged
15	to me that they executed the same for the purposes and
16	consideration therein expressed.
17	Given under my hand and seal of office this
18	, day of,,
19	
20	
21	
22	
23	NOTARY PUBLIC IN AND FOR THE STATE OF
24	COMMISSION EXPIRES:
25	

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181
 1
               IN THE UNITED STATES DISTRICT COURT
                FOR THE WESTERN DISTRICT OF TEXAS
 2
                          WACO DIVISION
 3
      NCS MULTISTAGE INC.
         Plaintiff,
 4
                                    CIVIL ACTION NO.
      vs.
 5
                                    6:20-cv-00277-ADA
      NINE ENERGY SERVICE,
 6
      INC.
         Defendant.
 7
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 9
                    REPORTER'S CERTIFICATION
10
                REMOTE VIDEOTAPED DEPOSITION OF
11
                  JOHN P. RODGERS, Ph.D., P.E.
12
                        NOVEMBER 9, 2020
13
14
         I, Julie C. Brandt, Certified Shorthand Reporter in
15
    and for the State of Texas, hereby certify to the
16
    following:
         That the witness, JOHN P. RODGERS, Ph.D., P.E., was
17
    duly sworn by the officer and that the transcript of the
18
19
    oral deposition is a true record of the testimony given
20
    by the witness;
21
         Before completion of the deposition, review of the
22
    transcript [X] was [ ] was not requested. If requested,
23
    any changes made by the deponent (and provided to the
24
    reporter) during the period allowed are appended hereto;
25
         That the amount of time used by each party at the
```

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182
 1
    deposition is as follows:
    Domingo Manuel Llagostera....00 HOUR(S):05 MINUTE(S)
 2
 3
    Parker Hancock.....04 HOUR(S):27 MINUTE(S)
 4
         That pursuant to information given to the
    deposition officer at the time said testimony was taken,
 5
 6
    the following includes counsel for all parties of
 7
    record:
 8
    FOR THE PLAINTIFF:
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         hpreston@velaw.com
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1	I further certify that I am neither counsel for,
2	related to, nor employed by any of the parties or
3	attorneys in the action in which this proceeding was
4	taken, and further that I am not financially or
5	otherwise interested in the outcome of the action.
6	Certified to by me, 2020.
7	Julie C. Brands
8	) J. Zierod
9	Julie C. Brandt, CSR, RMR, CRR
10	Texas CSR No. 4018 Expiration Date: 10/31/21
11	Expiración bacc. 10/31/21
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